



Volunteer Lake Assessment Program Individual Lake Reports

DUCK POND, FREEDOM, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	291	Max. Depth (m):	4.3	Flushing Rate (yr ⁻¹):	1.9	Year	Trophic class	KNOWN EXOTIC SPECIES
Surface Area (Ac.):	37	Mean Depth (m):	2.4	P Retention Coef:	0.67	1988	OLIGOTROPIC	
Shore Length (m):	1,300	Volume (m ³):	359,000	Elevation (ft):	434			

TROPHIC CLASSIFICATION

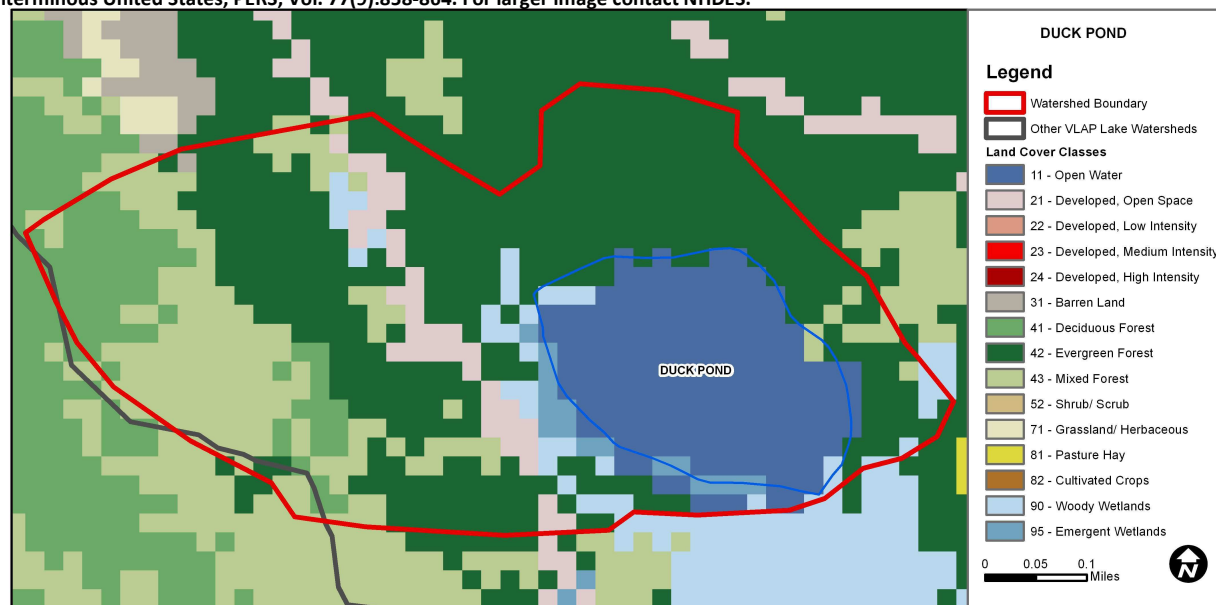
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	No Data	No Data for this parameter.
	Chlorophyll-a	Encouraging	< 10 samples and no exceedance of criteria. More data needed.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	19.4	Barren Land	0.13	Grassland/Herbaceous	0
Developed-Open Space	4.63	Deciduous Forest	7.89	Pasture Hay	0
Developed-Low Intensity	0	Evergreen Forest	43.7	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	17.15	Woody Wetlands	4.76
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	2



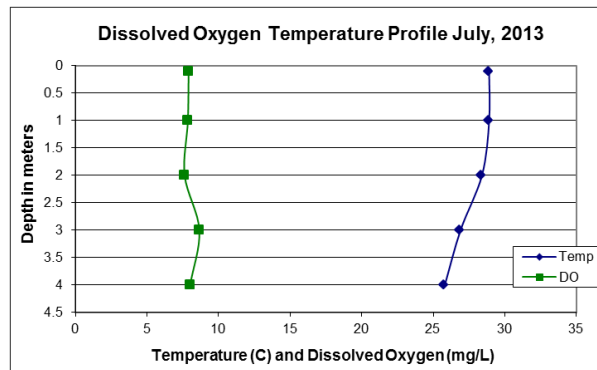
VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS

DUCK POND, FREEDOM, NH

2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphics)

- 🔥 **CHLOROPHYLL-A:** Chlorophyll levels were low and less than the state median. Visual inspection of historical data indicates stable chlorophyll levels since monitoring began.
- 🔥 **CONDUCTIVITY/CHLORIDE:** Deep spot conductivity was slightly great than the state median, however likely the natural background levels for the pond. Visual inspection of historical data indicates stable epilimnetic conductivity since monitoring began.
- 🔥 **TOTAL PHOSPHORUS:** Deep spot phosphorus levels were low and less than the state median. Visual inspection of historical data indicates relatively stable epilimnetic phosphorus.
- 🔥 **TRANSPARENCY:** Transparency was good and the Secchi disk was visible on the pond bottom in July which is a positive sign after significant rainfall occurred prior to sampling. Visual inspection of historical data indicates stable transparency since monitoring began.
- 🔥 **TURBIDITY:** Deep spot turbidity was low which was a positive sign after significant rainfall occurred prior to sampling.
- 🔥 **pH:** pH levels were sufficient to support aquatic life.
- 🔥 **DISSOLVED OXYGEN:** Dissolved oxygen levels were high throughout the water column and sufficient to support aquatic life.
- 🔥 **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer, typically June, July and August, to better assess seasonal and historical water quality trends. Overall water quality looks good; keep up the great work!



Station Name	Alk.	Chlor-a	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	uS/cm	ug/l	NVS	VS	ntu	
Epilimnion	4.30	2.53	52.7	8	4.20	4.20	0.63	6.81
Hypolimnion			52.9	7			0.59	6.88

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.

Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m³
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	N/A	Ten consecutive years of data necessary.	Chlorophyll-a	N/A	Ten consecutive years of data necessary.
Conductivity	N/A	Ten consecutive years of data necessary.	Transparency	N/A	Ten consecutive years of data necessary.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary.

